

SPLENECTOMY FOR MYELOGENOUS LEUKÆMIA.

REPORT OF LATER HISTORY OF A RECOVERED CASE, AND ULTIMATE DEATH FROM LOCOMOTOR ATAXIA.

BY MAURICE H. RICHARDSON, M.D.,

OF BOSTON, MASS.,

Surgeon to the Massachusetts General Hospital; Professor of Clinical Surgery, Harvard University.

IN an article on the Surgery of the Spleen, by Dr. Warren, the details of the following case were published, with remarks upon it by Dr. Whitney (see *ANNALS OF SURGERY* for May, 1901). In brief, the case is as follows:

Mrs. E. M. D., a patient of Dr. J. F. Croston, of Haverhill, I saw on December 12, 1900. In February, 1900, she first noticed a bunch in the left side of the abdomen. When I was called to see her, I expected, from the history, to find an ovarian tumor with twisted pedicle. The patient's mind had been prepared for operation, and everything was in readiness for it. Under ether the tumor was clearly an enlarged spleen. The outline was characteristic, the spleen was freely movable, the patient was in excellent condition.

No examination of the blood had been made, and none was at the time possible. The patient had, with the greatest reluctance, consented to operation. The physician and the family were sure that she could never again be brought to consider an operation,—a conviction which subsequent experience showed to be correct.

The question whether to remove the spleen or not had to be decided upon the spot. The enlarged spleen might mean any disease of that organ associated with great hypertrophy. All splenic tumors are necessarily serious, excepting, perhaps, the chronic enlargement seen in malarial districts. In some tumors of the spleen extirpation promises well for permanent cure; in others the outlook is practically hopeless. Without prolonged study of the case and careful blood examination, it was impos-

sible to give any opinion of value as to which class this tumor might belong.

The question of operation was carefully but briefly considered. The possibility of a myelogenous leukæmia was the most conspicuous feature of this case. I had seen many such cases, in none of which did extirpation of the spleen present the least hope of success. Indeed, I had never seriously considered operation.

In the present case, even if the spleen was a part of a leukæmia, its great mobility promised an easy and bloodless operation. If there was no leukæmia this spleen in the absence of malarial history belonged to the class of anæmias, and extirpation would give every chance of success.

I decided to operate, for if ever a splenectomy in myelogenous splenic leukæmia could be justified by prospective ease of technique, it would be in this case. The favorable prognosis as to operation gave hope that at least the successful extirpation of a leukæmic spleen would aid in settling definitely the real value of surgical treatment. However discouraging the experience of others had been in the removal of the spleen, it had been no more unsuccessful than medical treatment had always proved eventually.

The spleen was quickly removed without the loss of a teaspoonful of blood. The specimen was examined the next day by Dr. Whitney, and the diagnosis of splenic myelogenous leukæmia was made. His report was as follows:

"SPLEEN. Leukæmia. The spleen was removed by Dr. M. H. Richardson on December 12, 1900, and was received within three hours of the time of its removal and while yet warm. It was very much enlarged, weighing 2275 grammes, and measured 25 centimetres in length by 16 in width and 9 in thickness. Its shape and form were, in general, regular; but on one part of the surface there was a slight depressed area measuring 4 centimetres in greatest extent, and of a deep yellow color. This was evidently the result of an anæmic necrosis. Otherwise, the spleen presented no remarkable appearance externally. The capsule was smooth and of normal color. It was of moderate firmness.

"On section, it was uniform in texture and of a pale grayish red color. The openings of the vessels were visible, the follicles not to be made out with the eye, and the trabeculæ only here and there to be seen. At the hilus was a large vein filled with a loose grayish red thrombus. The blood which came from the vessels was of a pinkish red color and

formed rather loose coagula. Lying at the hilus, attached to the spleen, was a small lymph-node the size of a bean, and another a little larger had been removed separately.

"Microscopic Examination.—The spleen was hardened in Zenker's fluid and stained in various ways. With a low power the follicles were seen as occasionally widely separated accumulations of lymphoid cells which stained deeply. Between them the spleen pulp was very much increased, the openings of the veins were prominent and could be readily detected. On examination with a high power numbers of large mononucleated cells were found lying in the meshes of the reticulum associated with eosinophiles in large numbers. The reticulum was not increased in thickness, but the spaces seemed to be dilated, and in this way the increase in bulk was brought about.

"The examination of the lymph-nodes showed the lymph channels filled with large mononuclear cells, among which were occasional eosinophiles. The medullary strings were replaced by similar tissue, but less compact, and in which were very numerous eosinophiles and large multinucleated protoplasmic masses (giant cells). There was only a narrow zone of lymphoid tissue to be found in the periphery. The infiltration in the gland had apparently taken place from the hilus outward.

"Microscopic examination of the blood, taken at the time of the operation, showed the characteristics of an advanced leukæmia, viz., myelocytes, largely increased number of eosinophiles, and the presence of macrocytes and microcytes, together with numerous megaloblasts and normoblasts. The absence of lymphoid cells was noticeable. Examinations of the blood, made at short intervals until a month after removal, showed essentially the same features without any material change, except in the last examination, January 10, there appeared to be fewer myelocytes in proportion to the polynuclear leucocytes. There was no increase in the lymph elements."

The patient made a quick recovery, and was soon up and about. She improved wonderfully in health, and became able to perform her household duties and to enjoy life.

The blood was repeatedly taken and examined by Dr. Jones, who spent much time in the care and study of this case.

The patient early began to object to the taking of blood for examination, though every effort was made to induce her to consent. The more that was done for her, the more obstinate and suspicious she became.

For two or three years she seemed in perfect health. The family moved about the State, and was very difficult to trace. Finally, the patient came under the care of Dr. F. W. Anthony, of Haverhill, who, in February, 1904, reported as follows:

"The patient has been quite well since the operation, except

for a profuse flow every two weeks. This flow continued up to four months ago, since when there has been none. Her knees have been painful for some time, but are better now. Seven months ago she began to have attacks of profuse nose-bleed, which occurred every two or three weeks, and later she had attacks of rectal hæmorrhage, at intervals of three or four weeks. A short time ago she noticed pain and swelling of the left fourth metacarpal, with spontaneous fracture. The right wrist has been swollen at times. The eyesight has been poor for seven months. The left optic nerve is nearly, the right entirely, destroyed. There are no knee-jerks. The Argyll-Robertson reaction is present. There has been difficulty in walking, but no general ataxia; rather a general muscular weakness. The patient has been completely blind for two weeks. She is now stupid and sleeps most of the time. She does not want to be touched or disturbed in any way."

Dr. Jones made another attempt to get a specimen of the blood, but without success.

On November 16, 1904, Dr. Anthony reported:

"In a general way I saw her in 1903. She had then a typical locomotor ataxia, absent patellar reflex, ataxia of station and gait, eyesight nearly absent, spontaneous fracture of one or two fingers, painless swellings of several joints, general weakness. She complained of no abdominal symptoms. She declined all interference, even to the extent of obtaining a drop of blood for examination; and died the picture of death from locomotor ataxia."

I regret exceedingly that I am unable to present the details of this patient's final condition. A few things are, however, worthy of mention. The first important fact was the great improvement in the blood which followed the operation. It became normal. How long the blood continued so, I cannot say. It was probably for some time, for her general health was apparently restored. There was no greater improvement, however, than is seen occasionally in the regular course of the disease under medical treatment. We cannot, therefore, claim for the operation the improvement seen in this case.

The second fact is the distressful condition that the patient was in for some months previous to her death. I did not

see her, but she was reported by Dr. Jones and Dr. Anthony to be a great sufferer. It is a question whether her condition was worse than is usual in such cases. I do not know. It could not, under any treatment, have been any worse than it was. I do not think, however, that it is any fairer to assume that the late bad condition was the result of the operation than to assume that the early improvement was the result of it.

It seems to me a more reasonable assumption that the extirpation of the spleen had no effect upon the disease, one way or the other, early or late; that the improvement noted was the result of medical treatment following the operation; that the final break-up was the natural course of the disease.

Finally, I would say that if the early success of this case has encouraged others to extirpate a spleen in myelogenous leukaemia, it has done distinct harm. That the case may no longer be quoted as a case of successful operation in this disease, it has seemed important to publish the ultimate result. It is to be regretted that the patient could not be studied, and that no autopsy was made.

It is quite possible, of course, that my conclusions are unwarranted. A disease in which successful extirpations of the spleen are so unusual that the very success of the operation is to some minds the strongest evidence against the diagnosis, —in which almost the only successful operation has been followed, after temporary improvement, by a distressing death, —such a disease must by common sense be removed from the category of surgical affections, even if there is, as in this case, no positive proof that the final bad result is directly dependent upon the operation itself.